UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,227	12/28/2000	Darwin A. Engwer	3239P071	9335

8791 7590 08/06/2004		EXAMINER
BLAKELY SOKOLOFF TAYLOR & ZAFMAN		PHILPOTT, JUSTIN M
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ART UNIT	PAPER NUMBER
2665	

SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

DATE MAILED: 08/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Ύ

	Application No.		Applicant(s)
Office Action Summary	09/753,227	●	ENGWER ET AL.
	Examiner		Art Unit
	Justin M Philpott		2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 June 2004</u>.
2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>2-30</u> is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>2-30</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>07 May 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All   b)☐ Some * c)☐ None of:
   1.☐ Certified copies of the priority documents have been received.
   2.☐ Certified copies of the priority documents have been received in Application No. _____.
   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on June 4, 2004 has been entered.

Response to Arguments

2.   Applicant's arguments filed June 4, 2004 have been fully considered but they are not

persuasive.

First, applicant argues (page 10, second paragraph, lines 1-2) that Beach "teaches away

from a setting of DTIM fields within a beacon frame to inform a station that data is queued for

them". However, Beach does not teach away from such an operation. On the contrary, Beach

specifically states, "DTIM fields within beacon frames shall be set, per protocol specification, in

order to inform PSP stations that the [access point] has data queued for them" (col. 11, lines 19-

21). Further, Beach discloses, "a beacon with a DTIM counter less than the maximum value (7

Fh) will be generated *only if* there are frames in the broadcast queue" (emphasis added) (col. 11,

lines 60-62). Thus, applicant's argument that Beach teaches away from the above-mentioned

operation is not persuasive, since Beach specifically requires this operation.

Second, applicant argues (page 10, second paragraph, lines 2-8) that by disclosing Poll

frame operations in col. 11, line 65 to col. 12, line 26, Beach offers no teaching or suggestion of

broadcasting a data frame prior to receipt of any signaling from a device receiving the DTIM

beacon, as recited in applicant's newly amended independent claims. However, while Beach

may provide an improvement in the art comprising a Power Saving Polling technique (e.g.,

disclosed generally in col. 11, line 24 to col. 12, line 52), Beach specifically discloses that the

invention merely has the *option* of enabling a power saving mode (i.e., comprising the Power

Saving Polling technique). For example, Beach recites among the advantages of the invention

which include a communication system suitable for low-level communication requirements and a

communication system including an access unit incorporated in a mobile unit, that "a further

object of the invention [is] to provide a low level communication system offering the *option* of a

power saving mode" (emphasis added) (col. 2, lines 54-56). Clearly, by providing the user with

the option of such a power saving mode, Beach contemplates utilizing the invention without

engaging such a power saving mode. Thus, Beach clearly suggests utilizing the invention with

or without the above-mentioned Power Saving Polling technique which is part of the power

saving mode by disclosing the invention provides the user with the *option* to utilize such a mode.

Therefore, the teachings of Beach include broadcasting a data frame prior to receipt of any

signaling from a device receiving the DTIM beacon as recited in applicant's newly amended

independent claims, and applicant's argument to the contrary is not persuasive.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4.   Claims 2-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, independent claims 2, 5, 10, 15 and 20 each recite variations of the limitation of "broadcasting the data frame that comprises at least load balancing information prior to receipt of any signaling from a device receiving the DTIM beacon". The specification as originally filed does not disclose that broadcasting is performed specifically prior to receipt of signaling from a device receiving the DTIM beacon.

Dependent claims 3, 4, 6-9, 11-14, 16-19 and 21-30 are rejected for the same reason discussed above regarding their respective independent claims.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 2, 3, 5-8, 10, 12-16, 18-20, 22, 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,067,297 to Beach in view of the article entitled, "A New

Efficient access Protocol for Integrating Multimedia Services in the Home Environment" (IEEE,

June 1999) by Koutroubinas et al.

Regarding claims 2, 7 and 20, Beach teaches a method and access point logic comprising:

broadcasting a delivery traffic indication message DTIM beacon (e.g., see col. 11, lines 13-22),

the DTIM beacon having at least a traffic indicator bit that is set (e.g., DTIM field within beacon

frames are set, see col. 11, lines 19-21) to denote data is to be transmitted after the DTIM beacon

(i.e., access point has data queued for future transmission, see col. 11, lines 21-22), and

broadcasting (e.g., see col. 11, lines 57-58) the data that comprises at least load balancing

information (e.g., see col. 16, lines 42-46 regarding hoptick field; see also col. 1, lines 48-60

regarding hopping pattern, timing information, and associated mobile units) prior to receipt of

any signaling from a device receiving the DTIM beacon (e.g., see col. 2, lines 54-56 regarding

offering the option of a power saving mode, wherein the power saving mode comprises any

signaling from the device receiving the DTIM beacon, see col. 11, line 23 – col. 12, line 52, and

upon not utilizing the power saving mode the data is broadcasted prior to receipt of any signaling

from the device), wherein the access point is a wireless unit of a plurality of wireless units (e.g.,

see FIG. 2 and cols. 5-6).

However, Beach may not specifically disclose the DTIM beacon is a special beacon, and

may not specifically disclose the bit in the field denotes a specific transmission of a data frame

after the beacon.

Koutroubinas teaches a similar method and further, specifically teaches a special DTIM

beacon (e.g., Beacon B, see page 483, column 2, third-fifth paragraphs) comprises a field having

a traffic indicator bit (e.g., Network Allocation Vector NAV value) that is set to denote a

transmission of a data frame after the special beacon. The teachings of Koutroubinas provide

dynamic bandwidth allocation for improved system efficiency (e.g., see page 486, section "IV.

Conclusion"). Thus, at the time of the invention it would have been obvious to one of ordinary

skill in the art to apply the teachings of Koutroubinas to the method of Beach in order to provide

the method of Beach with dynamic bandwidth allocation for improved system efficiency.

Regarding claim 3, 29 and 30, Beach teaches the system is configured in accordance with

the IEEE 802.11 standard protocol (e.g., see col. 3, lines 9-11).

Regarding claims 5, 6 and 24, Beach in view of Koutroubinas teach the method discussed

above regarding claims 2, 7 and 20, and further, Koutroubinas teaches that each Beacon packet

defines the timing of the transmission of data traffic, and therefore, the teachings of

Koutroubinas encompass data frames being broadcast after a definitive time period has elapsed

after the broadcasting of the special beacon (e.g. see page 483, column 2, fourth paragraph, lines

5-8). As discussed above, the teachings of Koutroubinas provide dynamic bandwidth allocation

for improved system efficiency (e.g., see page 486, section "IV. Conclusion"). Thus, at the time

of the invention it would have been obvious to one of ordinary skill in the art to apply the

teachings of Koutroubinas to the method of Beach in order to provide the method of Beach with

dynamic bandwidth allocation for improved system efficiency.

Further, regarding claim 6, Koutroubinas may not specifically teach the data frame is

broadcast immediately after the broadcast of the special beacon. Rather, Koutroubinas teaches a

preferred embodiment in Figure 2a wherein Short InterFrame Space SIFS is provided, along with

a first Poll packet P, prior to transmission of data traffic ISO1. The preferred teachings of

Koutroubinas provide improved synchronization means. However, if bandwidth efficiency is

deemed more desirable in a system than such improved synchronization, one of ordinary skill in

the art would be motivated to implement the method of Beach in view of Koutroubinas by

broadcasting data traffic immediately after the broadcast of the special beacon in order to

increase bandwidth efficiency. Thus, for systems wherein bandwidth efficiency is deemed more

desirable than improved synchronization, at the time of the invention it would have been obvious

to one of ordinary skill in the art to implement the method of Beach in view of Koutroubinas by

broadcasting data traffic immediately after the broadcast of the special beacon in order to

increase bandwidth efficiency.

Regarding claims 8 and 22, Beach teaches the load balancing information is computed

from information pertaining to characteristics of wireless units in communication with the access

point (e.g., see col. 1, lines 52-56 regarding indication of how many mobile units are already

associated with the access point).

Regarding claims 10, 15 and 16, Beach in view of Koutroubinas teach the method

discussed above regarding claims 2, 7 and 20, and further, Beach teaches providing an access

point (e.g., access point AP, mobile unit MU, extended access point EAP, see col. 4, line 63 –

col. 5, line 27) for the broadcasting step, and Beach teaches that the beacon further comprises an

access point name (e.g., AP_ID, see col. 11, line 3), an access point identifier (e.g., identifying

address, see col. 1, lines 47-48) and an associated first frame check sequence (e.g., CRC, see col.

12, line 54 – col. 13, line 4).

Regarding claims 12-14, 18 and 19, Beach teaches a beacon comprises a DTIM and a

TIM (e.g., see col. 11, lines 13-22), and Koutroubinas teaches more generally a special Beacon

(B) which may or may not comprise either of DTIM or TIM. As discussed above, the teachings

of Koutroubinas provide dynamic bandwidth allocation for improved system efficiency (e.g., see page 486, section "IV. Conclusion"). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the teachings of Koutroubinas to the method of Beach in order to provide the method of Beach with dynamic bandwidth allocation for improved system efficiency. Accordingly, the teachings of Beach in view of Koutroubinas encompass a special beacon comprising one or both of a DTIM and TIM.

Regarding claim 25, Beach teaches the load balancing information comprises a count of a number of wireless units currently associated with the access point (e.g., see col. 1, lines 52-56 regarding indication of how many mobile units are already associated with the access point).

Regarding claims 26 and 28, Beach teaches the wireless unit decides whether or not to associate with a given access unit based on "any information the access unit may have issued indicating how many mobile units are associated with it" (col. 1, lines 52-56). Thus, Beach teaches the load balancing information comprises an indicator as to whether the access point is able to access one or more additional wireless units, since "any information" indicating the number of mobile units that are/can be associated with the access unit encompasses "an indicator" as recited in claim 26. Further, regarding claim 28, Beach similarly teaches an indicator which indicates whether a count of a number of wireless units exchanging data at a rate exceeds a predetermined threshold (i.e., "any information" includes that which indicates the threshold number of mobile units that can be associated with the access unit).

Regarding claim 27, Koutroubinas teaches a value (e.g., Beacon period) corresponding to a speed (e.g., frame rate) of an uplink from the access point to a backbone network at which the access point is coupled (e.g., see page 485, column 2, lines 4-5). As discussed above, the

teachings of Koutroubinas provide dynamic bandwidth allocation for improved system efficiency

(e.g., see page 486, section IV. Conclusion). Thus, at the time of the invention it would have

been obvious to one of ordinary skill in the art to apply the teachings of Koutroubinas to the

method of Beach in order to provide the method of Beach with dynamic bandwidth allocation for

improved system efficiency.

7.   Claims 4, 9, 11, 17, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Beach in view Koutroubinas, further in view of U.S. Patent No. 5,548,821 to Coveley.

        Regarding claims 4, 9, 11, 17, 21 and 23, Beach in view of Koutroubinas teach the

method as described above regarding claims 3 and 20, however, may not specifically disclose

transmitting a static bit test pattern. Coveley teaches an adaptive system for self-tuning in a

wireless communications environment whereby a static bit test pattern (e.g., test sequence) is

transmitted and a receiver determines which operating frequency to select based upon the

accuracy of the received test pattern with a known test pattern (e.g., see col. 1, line 62 – col. 2,

line 55). The teachings of Coveley provide improved accuracy of transmission and overcomes

prior art disadvantages such as receiving center operating frequency drift, and further, the

teachings of Coveley permit transmitters to have slightly different carrier frequencies which

more suitably accommodates systems with less precise transmission frequencies (e.g., see col. 2,

lines 1-8). Thus, at the time of the invention it would have been obvious to one of ordinary skill

in the art to apply the teachings of Coveley to the method of Beach in view of Koutroubinas in

order to provide improved accuracy of transmission and to accommodate a greater range of

transmission frequency variance.

Further, regarding claims 11 and 17, Beach teaches the beacon comprises a frame check·

sequence (e.g., CRC, see col. 12, line 54 – col. 13, line 4). While Beach may not specifically

disclose two frame check sequences, it is generally considered to be within the ordinary skill in

the art to duplicate parts for a multiplied effect. St. Regis Paper Co. v. Bemis Co., Inc., 193

USPQ 8, 11 (7th Cir. 1977). Thus, at the time of the invention it would have been obvious to one

of ordinary skill in the art to include a second frame check sequence in the beacon of Beach in

view of Koutroubinas in view of Coveley, since it is generally considered to be within the

ordinary skill in the art to duplicate parts for a multiplied effect.

Conclusion

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Justin M Philpott whose telephone number is 703.305.7357. The

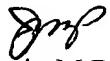examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy D Vu can be reached on 703.308.6602. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 2665

Justin M Philpott

ALPUS H. HSU
PRIMARY EXAMINER